Trig Practice WS #5

1. a. Graph $y = 5 + 7\cos 4(\theta - 7°)$. Show two complete cycles.
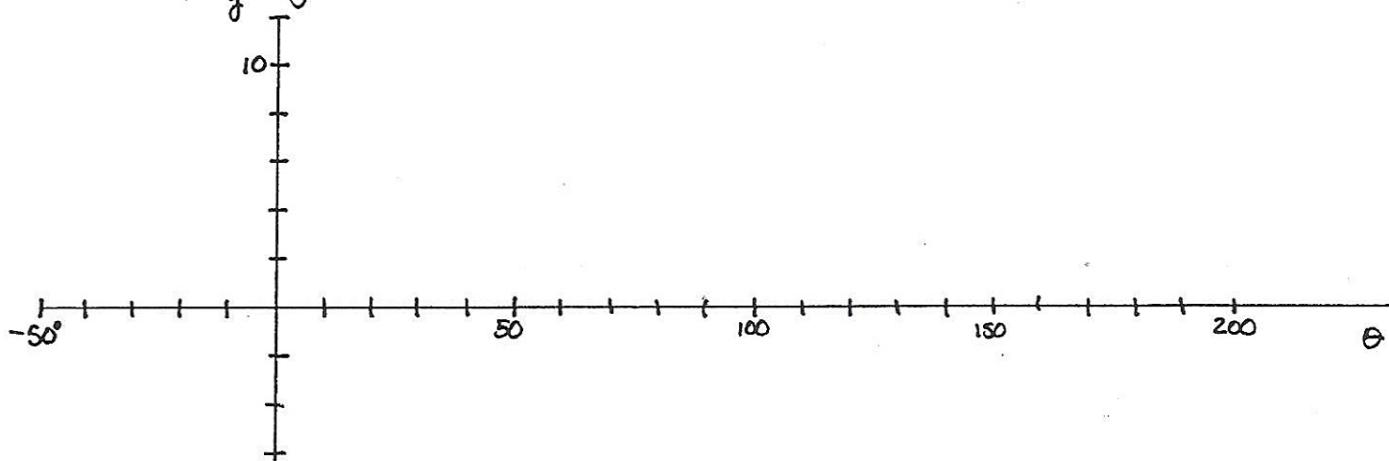
b. What is the amplitude of the function? _____

c. What is the period of the function? _____

D. Find y if $\theta = 42°$. Show your process AND LABEL the point on the graph, "D".

E. Find θ if $y = 10$. Show your process and label the point on the graph, "E".

2. Write the correct equation for this graph.

1.
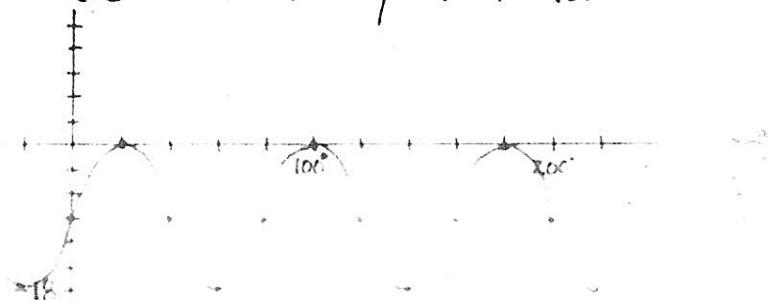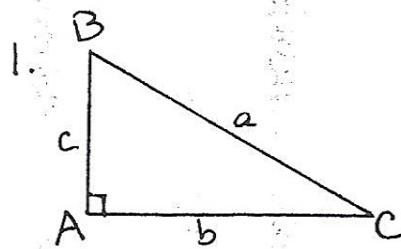
$m \angle B = 62°$
$a = 12'$

Find $m \angle C$, b, & c.

2. If the measures of the three sides of a right triangle are 8, 15, & 17, what are the measures of the two acute angles?

3. A plane takes off with an angle of elevation of 27°. If it continues at this angle and averages 450 mph, how long will it take to reach its cruising altitude of 33,000 ft? (1 mile = 5280 ft)

4. Convert: $\frac{7\pi}{20}$ RADIANS = _____°   250° = _____ RADIANS

   1 RADIAN = _____°   10 Revolutions = _____ RADIAN

5. Find the angle coterminal to the following angles which lies between 0° & 360° or 0 & 2π radians.

   a. 800°   b. $\frac{7\pi}{3}$ c. −450°   d. $\frac{32\pi}{5}$

6. Name the 6 trig values for the angle in standard position whose terminal side passes through (−4, 5).

7. Find the exact value of $y = \cos^2\theta - \sin^2\theta$ if $\theta = 30°$.

8. If $\cos\theta = \frac{2}{3}$ and $270° < \theta < 360°$, $\sin\theta = ?$

9. A wheel with a radius of 18" spins at a rate of 20 revolutions per minute.
   a. Find the circumference of the wheel.
   b. What is the linear velocity of a point on the wheel in inches per minute? ft/sec?

10. What angle in the third quadrant has a reference angle of:
    a. 40°   b. $\pi/4$ radians